

79 is not substantively addressed in the Office Action. Instead, the Office Action's descriptions of each rejection, and the Response to Arguments section beginning at page 6, are identical to those in the October 28, 2004 Office Action, and do not address subsequently added claim 79.

I. Claims 25, 26, 29, 35 and 79 Satisfy the Requirements of 35 U.S.C. §112, First Paragraph

A. Claims 25, 26, 29, 35 and 79 Satisfy the Written Description Requirement

In paragraph 2 on pages 2-3, the Office Action rejects claims 25, 26, 29, 35 and 79 under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. This rejection is respectfully traversed.

This rejection is merely a verbatim restatement of a rejection that appeared in the previous Office Actions dated October 24, 2003 and October 28, 2004, and is now extended to cover new claim 79.

In the explanation of the various rejections, the Office Action correctly concedes that the Applicants have shown that their materials are semiconductors and thus that the Applicants disclosed ink jetting of semiconductors. However, the Office Action asserts in paragraph 2 on page 2 that:

[t]here are semiconductor materials, which are not suitable for the production of electro luminescent devices, and these materials would be outside of the original disclosure. The amended claims encompass materials that the applicants had never conceived of being used in their invention. Semiconductor materials are used in other applications, such as transistors, capacitors, etc all of which are outside the scope of the original disclosure.

This rejection was also included in the prior Office Actions dated October 24, 2003 and October 28, 2004. Applicants responded to the rejections in the Requests for Reconsideration filed January 26, 2004 and February 23, 2005. In response to Applicants' arguments, in the second paragraph on page 6, the Office Action, "maintains that the applicants have expanded the scope of the claims beyond the original disclosure." The Office Action asserts that the Applicants' arguments leave it unclear, "how the scope of the claims can be reasonably expanded to encompass 'organic semiconductors' in general".

To satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, 19 USPQ 2d 1111, 1117 (Fed. Cir. 1991). An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997) (emphasis added).

Independent claims 25 and 79, from which claims 26, 29 and 35 depend, recites, *inter alia*, "depositing a semiconducting organic material in a solvent onto a substrate [or a first layer] by ink-jet printing". The rejection is focused on this claimed subject matter. In the first full paragraph on page 3 of the January 26, 2004 Request for Reconsideration and in the second paragraph on page 3 of the February 23, 2005 Request for Reconsideration, Applicants pointed out that, "the specification discloses numerous materials that the Office Action admits to be semiconducting organic materials, and discloses that they may be ink-jetted." In those paragraphs, Applicants also pointed out the supporting relationship between

that disclosure in specification and, "the claimed feature of ink-jetting semiconductor organic materials."

A person having an ordinary level of skill in the art at the time the application was filed would read the examples of semiconducting organic materials disclosed in the application, know that they were semiconducting organic materials, and know therefore that the Applicants had possession of semiconducting organic materials in general based on the specific disclosed examples. The key "distinction" in evaluating whether the application has written description support for all semiconducting organic materials "is based upon what would be reasonably conveyed to a person skilled in the art at the time of the original disclosure." *Bilstad v. Wakalopulos*, 386 F.3d 1116, 1125, 72 USPQ2d 1785 (Fed. Cir. 2004) (finding the written description requirement satisfied with respect to broad claims supported by a limited number of examples). The present specification meets the written description requirement of §112, first paragraph, with respect to the Office Action's rejection of claims 25, 26, 29, 35 and 79, because one skilled in the art at the time the application was filed would have understood that Applicants were in possession of the claimed invention based on Applicants' disclosure of ink jetting numerous specific examples of semiconducting organic materials.

Further, the present specification, in the context of manufacturing an organic EL element and EL display device, fully and clearly describes depositing an organic material in a solvent on a substrate or a first layer by ink-jet printing, and the Office Action admits that the organic materials disclosed in the present specification are semiconducting organic materials. Thus, the specification discloses specific exemplary embodiments, "species" of EL devices, of the "genus" of electronic devices wherein a pattern is formed on a substrate or a first layer by depositing a semiconducting organic material by ink-jet printing.

The case law includes a long line of cases holding that a specification describing a specific exemplary embodiment or species can satisfy the written description requirement with respect to a claim encompassing all of a genus that includes the disclosed embodiment or species. For example, in *In re Smythe*, 480 F.2d 1376 (CCPA 1973), the court found the written description requirement satisfied for a claim of "a fluid" where the specification only disclosed air and never used the word "fluid". Similarly, in *In re Rasmussen*, 650 F.2d 1212 (CCPA 1981), the court held that the disclosure of a single embodiment of applying an adhesive satisfied the written description requirement for a claim encompassing all methods of applying an adhesive. Likewise, in *Lampi Corp. v. Am. Power Prods., Inc.*, 228 F.3d 1365 (Fed. Cir. 2000), the court found the written description requirement satisfied for a claim encompassing all half-shells by a disclosure of only one kind of half-shells. Thus, the present specification meets the written description requirement of §112, first paragraph, with respect to claims 25, 26, 29, 35 and 79, because the specification disclosed specific exemplary embodiments, the species of EL devices, of the claimed genus of devices wherein a pattern is formed on a substrate or a first layer by depositing a semiconducting organic material by ink-jet printing.

In addition, the specification discloses specific materials well known in the art to be suitable for the production of transistor devices as well as EL devices. Thus, contrary to the Office Action's assertion, the present specification discloses ink-jetting of semiconductor organic materials that are not limited to use in the production of EL devices. There are exceptions to the rule that the disclosure of a specific embodiment or species satisfies the written description requirement for a claim encompassing all of a genus that includes the disclosed embodiment or species, but those exceptions do not apply in this case. For example, in *In re Curtis*, 354 F.3d 1347 (Fed. Cir. 2004), the court held that the disclosure of a particular friction enhancing material for coating dental floss did not satisfy the written

description requirement for a claim encompassing all friction enhancing coatings on dental floss because no one knew of any material other than the disclosed material that would adhere to the floss.

Here, the fact that disclosed semiconducting organic materials are also known to be useful in transistor devices demonstrates that such semiconducting organic materials were not known only for EL devices. Therefore, Applicants respectfully assert that the present specification meets the written description requirement of §112, first paragraph, with respect to claims 25, 26, 29, 35 and 79 because a person having an ordinary level of skill in the art at the time the application was filed would know that a variety of semiconducting organic materials could be substituted for the specific semiconducting organic materials disclosed in the specification, and ink-jetted onto the substrate or a first layer of any device, including a transistor device, not just the exemplary EL device disclosed.

Next, in the third paragraph on page 6 through the end of page 7, the current Office Action cites MPEP §2162 and several cases. However, the Office Action draws no connection between the cited legal authority and the present specification or claims. The Office Action does not explain how the cited legal authority relates to claims 25, 26, 29, 35 or 79, or the specification of this application. In fact, the legal authority cited by the Office Action supports the conclusion that the specification satisfies the written description requirement with respect to claims 25, 26, 29, 35 and 79 for at least the reasons discussed below.

The Office Action cites *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555 (Fed. Cir. 1991) for the proposition that, "a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention." As described above, and as conceded by the Office Action, the present specification discloses the deposition of semiconducting organic materials

in a solvent onto a substrate or a first layer by ink-jet printing. A person having an ordinary level of skill in the art at the time the application was filed would read the examples of semiconducting organic materials disclosed in the application, know that they were semiconducting organic materials, and know therefore that the Applicants had possession of ink-jet printing semiconducting organic materials onto a substrate or a first layer based on the specific disclosed examples. Further, the EL devices disclosed in the specification are specific exemplary embodiments of an electronic device wherein a pattern is formed on a substrate or a first layer by depositing a semiconducting organic material by ink-jet printing. A person having an ordinary level of skill in the art at the time the application was filed would know that the semiconducting organic materials disclosed in the specification for use in the exemplary EL devices were also suitable for use in other devices. Therefore, the present specification provides sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the subject matter recited in claims 25 and 79, from which claims 26, 29 and 35 depend.

The Office Action then cites *Enzo Biochem, Inc. v. Gen-Probe, Inc.*, 296 F.3d 1316 (Fed. Cir. 2002). *Enzo* involves a fact specific further inquiry regarding §112 description of a claimed material by depositing a sample of the material in a public depository. This fact specific further inquiry of *Enzo* clearly does not apply here because this case does not involve depositing a sample of a material in a public depository.

The Office Action next cites *Martin v. Mayer*, 823 F.2d 500 (Fed. Cir. 1987) for the proposition that, "the only inquiry is whether [the application's] disclosure contains . . . support for all material limitations of the claim as presented. . . ." This is just a broad statement of the law regarding the written description requirement. Here, neither the Office Action nor the Applicant has argued that any limitation of claims 25 or 79 (or claims 26, 29 or 35), including the preamble of claims 25 or 79 (or claims 26, 29 or 35), should be exempt

from the written description requirements of 35 U.S.C. §112, first paragraph. Therefore, the principle for which the Office Action cites *Martin v. Mayer* is not applicable to the issue of whether claims 25, 26, 29, 35 and 79 satisfy the written description requirement. In fact, claims 26, 26, 29, 35 and 79 do satisfy that requirement - each limitation of those claims is clearly set out in the specification.

Also citing *Squires v. Corbett*, 560 F.2d 424 (CCPA 1977), the Office Action presents the legal principle that the disclosure of another cannot be drawn upon to fill in gaps in a patent Applicant's disclosure. Here, neither the Applicants nor the Office Action have argued or alleged that the Applicants are relying on any disclosure other than their own disclosure to satisfy the written description requirement. Applicants are not relying on the disclosure of U.S. Patent No. 6,087,196 to Sturm et al., with which Applicants have requested an interference, to fill in any gaps in Applicants' disclosure. In fact, no such gaps exist because 1) a person having an ordinary level of skill in the art at the time the application was filed would read the examples of semiconducting organic materials disclosed in the application, know that they were semiconducting organic materials, and know therefore that the Applicants had possession of ink-jet printing semiconducting organic materials onto a substrate or a first layer based on the specific disclosed examples, 2) the EL devices disclosed in the specification are specific exemplary embodiments of an electronic device wherein a pattern is formed on a substrate or a first layer by depositing a semiconducting organic material by ink-jet printing, and 3) a person having an ordinary level of skill in the art at the time the application was filed would know that the semiconducting organic materials disclosed in the specification for use in the exemplary EL devices were also suitable for use in other devices. Therefore, because the Applicants are not relying on any disclosure other than their own, the Office Action's reliance on *Squires v. Corbett* is inapplicable to the written description rejection of claims 25, 26, 29, 35 and 79.

In the second full paragraph on page 7, the Office Action cites *Maschinenfabrik GMBH v. American Hoist and Derrick Co.*, 730 F.2d 1452 (Fed. Cir. 1984), in support of the proposition that, "[s]ection 112 does not require that the specification contain that which is known to those skilled in the art." This proposition supports the Applicants' position. Because §112 does not require that the specification contain that which is known to those skilled in the art, the Applicants satisfy the written description requirement for claims 25 and 79 without listing every single material known to those skilled in the art as a semiconducting organic material. In other words, a person having an ordinary level of skill in the art at the time the application was filed would read the examples of semiconducting organic materials disclosed in the application, know that they were semiconducting organic materials, and know therefore that the Applicants had possession of ink-jet printing semiconducting organic materials onto a substrate or a first layer based on the specific disclosed examples. Likewise, the written description requirement for claims 25 and 79 does not require the specification to describe more than one exemplary product in which a pattern is formed by depositing a semiconducting organic material by ink-jet printing.

At the end of the second full paragraph on page 7, the Office Action cites *Jepson v. Coleman*, 314 F.2d 533, 536 (CCPA 1963), for the proposition that, "[i]t is 'not a question of whether one skilled in the art *might* be able to construct the patentee's device from the teachings of the disclosure. . . .'" In that case the application expressly excluded subject matter that "*may or may not*" be encompassed by the interference count. *Id* (emphasis in original). Here, the specification does not expressly exclude any semiconducting organic material or any type of device. Applicants have not argued that one skilled in the art "*might*" be able to recognize that any semiconducting organic material could be deposited in a solvent onto a substrate or a first layer by ink-jet printing in any device. Rather, as detailed above, Applicants argue that there is no question that one skilled in the art would be able to

recognize that fact. Thus, the principle for which *Jepson v. Coleman* is cited in the Office Action does not pertain to the alleged failure of claims 25, 26, 29, 35 and 79 to satisfy the written description requirement.

In the first full paragraph on page 7, the Office Action cites *In re Ruschig*, 379 F.2d 990 (CCPA 1967), for the proposition that, "[t]he specification must 'clearly convey to those skilled in the art' the subject matter of the claims. This is just another broad statement of the law regarding the written description requirement. For all the reasons previously stated, the subject matter of claims 25, 26, 29, 35 and 79 is clearly conveyed to those skilled in the art by the present specification. In other words, the principle for which the Office Action cites *In re Ruschig* supports the Applicants' position that the specification satisfies the written description requirement with respect to claims 25, 26, 29, 35 and 79.

For all the reasons discussed above, the cases cited by the Office Action fail to support the conclusion that claims 25, 26, 29, 35 and 79 lack written description support in the specification. In fact, for the reasons discussed above, the case law supports the conclusion that the specification does satisfy the requirement of written description support for claims 25, 26, 29, 35 and 79.

The *Bilstad* case further supports the position that claims 25, 26, 29, 35 and 79 satisfy the written description requirement. In *Bilstad*, the specification disclosed manipulating objects in a small number of directions and claimed manipulating those objects in a plurality of directions. The Federal Circuit reversed a Board holding that this disclosure failed to satisfy the written description requirement. The Board found the written description requirement unsatisfied because the specification did not disclose a very large number of directions. In reversing the Board, the Federal Circuit held that a disclosure of manipulating objects in a small number of directions provides sufficient written description for a claim of a plurality of directions that is unbounded or infinite at its upper end. In a like manner here, as

the previously cited cases establish, it was not required that the Applicants disclose every existing organic semiconducting material in the specification to support a claim that encompasses ink-jet printing every organic semiconducting material onto every substrate or first layer. Similarly, as demonstrated by the previously cited cases, it was not necessary here for the Applicants to disclose every device in which a pattern can be formed on a substrate or a first layer by ink-jet printing a semiconducting organic material. As with the mechanical device of *Bilstad*, there are a predictable range of semiconducting organic materials and a predictable range of devices in which they are deposited on a substrate or a first layer by ink-jet printing. Therefore, as established above, it was only necessary for the Applicants to disclose one preferred, exemplary embodiment of such a device. This requirement the Applicants have satisfied by disclosing an exemplary EL device.

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 25, 26, 29, 35 and 79 under 35 U.S.C. §112, first paragraph, as lacking written description be withdrawn.

B. The Specification Fully and Clearly Enables the Scope of Claims 25, 26, 29, 35 and 79

In paragraph 3 on page 3, the Office Action rejects claims 25, 26, 29, 35 and 79 under 35 U.S.C. §112, first paragraph, as based on a disclosure that is non-enabling. This rejection is respectfully traversed.

This rejection is merely a verbatim restatement of a rejection that appeared in the previous Office Actions dated October 24, 2003 and October 28, 2004, and is now extended to cover new claim 79. In fact, in the middle of paragraph 3, on page 3, the Office Action erroneously only lists claims 25, 26, 29 and 35 (consistent with October 24, 2003 and October 28, 2004 Office Actions) and omits claim 79.

The Office Action asserts that an electroluminescent layer is critical or essential to the practice of the invention, but not included in the claims. The Office Action further asserts that claims 25, 26, 29 and 35 (and, presumably, 79) are directed generically to semiconductor materials, while the original disclosure was directed to electroluminescent (EL) devices, and that there is no provision in the disclosure to produce any device other than an EL device. Thus, the Office Action asserts that the original disclosure's failure to disclose applications other than the production of EL devices makes this a critical feature of the invention that must be included in the claims.

The Office Action, at page 3, attempts to limit claim 25 (and, presumably, 79) to EL devices alone. The Office Action asserts that the semiconducting organic materials disclosed in the present specification can only be used to form an electroluminescent layer. However, it is well established that a rejection under §112, first paragraph, is improper absent clear language in the specification that certain disclosed subject matter is critical for the broader claimed invention to operate as intended. *See, e.g., In re Peters*, 723 F.2d 891, 893-894 (Fed. Cir. 1983) (holding that claims broader than the disclosure satisfied the requirements of §112, first paragraph, because "nothing in the original disclosure indicates or suggests that the [narrower disclosure] was essential or critical to either the operation or patentability of the invention" (emphasis added)); *In re Rainer*, 305 F.2d 505, 508 (CCPA 1962). Here, no language exists in the specification stating that a luminescent layer is critical to the invention of the present claims. Thus, no such language in the specification has been cited in the Office Action. Applicants respectfully submit that, consequently, as argued above, one of ordinary skill in the art would recognize that the process recited in claims 25 and 79 is not limited to use with the exemplary EL device disclosed in the specification.

Therefore, contrary to the Office Action's assertion, one reasonably skilled in the art, by reading the disclosure in the present specification and with information known in the art,

could make and use the invention set forth in claims 25, 26, 29, 35 and 79 without undue experimentation, i.e., "depositing a semiconducting organic material in a solvent onto a substrate [or a first layer] by ink-jet printing".

Under the 35 U.S.C. §112, first paragraph, enablement requirement, the specification must describe how to make and how to use the claimed invention so as to enable any person skilled in the art to make and use the claimed invention. The test for enablement is whether one reasonably skilled in the art could make and use the claimed invention from the disclosures in the patent coupled with information known in the art without undue experimentation. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). A patent need not teach, and preferably omits, what is well known in the art. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986), *cert. denied*, 480 U.S. 947 (1987).

As discussed above and previously argued, the present specification, in the context of manufacturing an organic EL element and EL display device, fully and clearly describes depositing materials that are semiconducting and organic in a solvent by ink-jet printing on a substrate or a first layer. The Office Action admits that the organic materials disclosed in the present specification are semiconducting. A person having an ordinary level of skill in the art at the time the application was filed would read the examples of semiconducting organic materials disclosed in the application, know that they were semiconducting organic materials, and know that other semiconducting organic materials could be substituted based on the specific disclosed examples. Similarly, the EL devices disclosed in the specification are specific exemplary embodiments of an electronic device wherein a pattern is formed on a substrate or a first layer by depositing a semiconducting organic material by ink-jet printing. A person having an ordinary level of skill in the art at the time the application was filed

would know that the semiconducting organic materials disclosed in the specification for use in the exemplary EL devices were also suitable for use in other devices.

Thus, one reasonably skilled in the art, by reading the disclosure in the present specification and with information known in the art, could make and use the invention set forth in claims 25, 26, 29, 35 and 79 without undue experimentation, i.e., "depositing a semiconducting organic material in a solvent onto a substrate [or a first layer] by ink-jet printing". The fact that the specification discloses ink-jetting materials that are semiconducting and organic in the context of making an EL device does not make the specification non-enabling with respect to other devices because, as stated above, a person having an ordinary level of skill in the art at the time the application was filed would know that the semiconducting organic materials disclosed in the specification for use in the exemplary EL devices were also suitable for use in other devices.

In fact, while the present specification may focus on forming EL devices, the present specification, at page 12, lines 31-34, discloses semiconducting organic materials, such as, for example, polyalkylthiophene, poly(2,5-thienylene vinylene), polyarylene vinylene, polyparaphenylene, polyalkylfluorene. As discussed above, these materials are well known to those skilled in the art to be used for the production of transistor devices as well as EL devices. Thus, the present specification discloses an exemplary embodiment that would enable a person having an ordinary level of skill in the art at the time the application was filed to use the semiconducting organic materials disclosed in the specification in another device such as a transistor device.

For at least the foregoing reasons, Applicants respectfully submit that the present specification meets the enablement requirement of §112, first paragraph. Therefore, it is respectfully requested that the rejection of claims 25, 26, 29, 35 and 79 under 35 U.S.C. §112, first paragraph, as being based on a non-enabling disclosure be withdrawn.

II. Claims 25, 26, 29, 35, 78 and 79 Define Allowable Subject Matter

In sections 4-9 on pages 3-5, the Office Action rejects claims 25, 26, 29, 35, 78 and 79 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Nos. 5,250,439 and 5,202,261 to Musho et al. (hereinafter "Musho '439" and "Musho '261"). In sections 10-13 on page 5, the Office Action rejects claims 25, 26, 29, 35 and 78 under 35 U.S.C. §103(a) as being unpatentable over Musho '439. These rejections are respectfully traversed.

These rejections are merely verbatim restatements of rejections that appeared in the previous two Office Actions. The rejections under 35 U.S.C. §102(b) are now extended to cover new claim 79. The Office Action does not make any new assertions regarding new claim 79.

As previously argued, neither Musho '439 nor Musho '261 discloses, teaches or suggests a "process for forming a pattern on a substrate by deposition of an organic material comprising... depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing" as set forth in independent claims 25 and 79, from which claims 26, 29, 35 and 78 depend.

In accordance with U.S. case law "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

An Examiner must consider the language of the preamble of the claim. "If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if

the claim preamble is 'necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999) (emphasis added).

The Office Action, at page 4, asserts as follows:

even if the preamble was considered to "breath life and meaning" to the claimed process, the examiner notes that no particular pattern is required. The examiner takes the position that what is produced in Musho et al. is a "solid pattern" based on the way it was formed.

(emphasis added)

Applicants respectfully disagree with the Office Action's assertion that Musho '261 or Musho '439 discloses "forming a pattern on a substrate [or a first layer]", as recited in claim 25 (and claim 79). All of the exemplary embodiments of patterns of layers described in the specification and shown in the figures show that the resultant deposits are not continuous. *See, e.g.*, page 6, line 34 to page 7, line 1, and Figs. 1-10. Thus, the specification refers to the patterning as, for example, fine (page 8, line 24) and precise (page 21, line 2).

In contradistinction, in Musho '439 and Musho '261 there is no discontinuous or fine pattern for the film/layer 16 in the diagnostic test device 10. Rather, in Musho '439 and '261, the only requirement is that there be a film/layer 16 formed of a certain thickness. See Musho '439 at col. 31, lines 14-18.

Further, both Musho '439 and Musho '261 are devoid of any disclosure of "forming a pattern...by ink-jet printing", as set forth in claims 25 and 79. The Office Action, at page 4, asserts that "the term 'ink-jet printing inherently means that a design or 'pattern' is formed, even if this is on a microscopic scale based on the way the ink is laid down." Further, in the last full paragraph on page 7, and the paragraph bridging pages 7 and 8, the Office Action

alleges that, "a pattern is not claimed. . . ." Applicants respectfully disagree with the Office Action's assertions.

Claims 25 and 79, from which claims 26, 29, 35 and 78 depend, recites, "forming a pattern on a substrate [a first layer] . . ." Applicants respectfully submit that this recitation in the rejected claims clearly encompasses the formation of a pattern. Thus, Applicants respectfully submit that a pattern is clearly claimed.

The Office Action goes on to allege that, in applications where solid areas are to be printed by computer printers, "the ink jet dots are put very close together [to] make what appears to be a solid coating, but on a microscopic scale there still are dots." However, a series of microscopic dots does not constitute a pattern according to the combinations as recited in claims 25, 26, 29, 35, 78 and 79. The specification explains the meaning of the recitation of a "pattern" in the rejected claims. In the present application, "forming a pattern on a substrate [or a first layer]" is disclosed in the context of forming devices that require precise design arrangement and/or structure of the deposited organic semiconducting material on the substrate or a first layer. A person having an ordinary level of skill in the art at the time the application was filed would recognize that the use of the term "pattern" in the present specification requires a design arrangement and/or structure other than a solid, continuous layer, even when formed of dots on a microscopic scale. Thus, a pattern, according to claims 25, 26, 29, 35, 78 and 79, is not a solid layer, and a solid layer is not such a pattern regardless of the possible presence of variations in the surface arising as artifacts of the process of ink-jetting a continuous layer.

Further, the Office Action presents the argument that a microscopic pattern of dots is a pattern with respect to the prior art rejection relying on Musho '261 and Musho '439. However, neither Musho '261 nor Musho '439 disclose forming a microscopic pattern of dots by ink-jet printing. Rather, Musho '439 clearly discloses that conducting polymer 16 is a

solid layer, consistent with continuous film 18. Col. 19, lines 9-10. The purpose of conducting polymer 16 is to contact with the microelectrode assembly 20. Col. 20, lines 50-54. The purpose of that contact is so the microelectrode assembly 20 can detect a change in the conductivity of the conducting polymer 16. Col. 20, lines 54-57. Any change in the conductivity of the conducting polymer 16 must be exhibited and measured rapidly.

Musho '439 clearly teaches that it is necessary, "to achieve the full advantage of the present invention" that, "the rate of increase in conductivity is measured" with an extremely quick response time, "preferably from within 5 seconds to 10 seconds". Col. 20, lines 64-68. In other words, a discontinuity in the conducting polymer 16 as the result of that polymer containing any pattern, instead of a completely continuous solid layer, would frustrate the intended use of the disclosure of Musho '439. Thus, Musho '439 strongly teaches away from forming a pattern on a substrate or a first layer as recited in claims 25 and 79, and even teaches away from discontinuities in the conducting polymer 16 on the microscopic level.

Musho '261 is the parent specification to Musho '439. Thus, Musho '261 suffers from the same deficiencies as Musho '439 with respect to claims 25, 26, 29, 35, 78 and 79. Musho '261 does not disclose, teach or suggest forming a pattern on a substrate according to the combinations as recited in claims 25, 26, 29, 35, 78 and 79.

In the sentence bridging pages 7 and 8, and the first full sentence on page 8, the Office Action makes general allegations regarding what the prior art discloses regarding ink-jet printing. However, the prior art applied in the rejections of claims 25, 26, 29, 35, 78 and 79 is Musho '261 and Musho '439. Thus, the prior art to which the Office Action must be referring consists exclusively of Musho '261 and Musho '439. As described above, Musho '261 and Musho '439 are seriously deficient regarding the subject matter recited in claims 25, 26, 29, 35, 78 and 79.

For at least the foregoing reasons, it is respectfully submitted that claims 25 and 79 are patentable over Musho '261 and Musho '439. Claims 26, 29, 35 and 78 are allowable based at least on their dependence from claim 25 for the reasons stated above in connect with the rejection of claim 25. Therefore, it is respectfully requested that the rejection of claims 25, 26, 29, 35, 78 and 79 under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) be withdrawn.

III. Conclusion

In view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 25-46 and 54-79 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:

Petition for Extension of Time

Date: November 14, 2005

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